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## PROJECT HEART START

A Program to Save Lives of Victims of Sudden Cardiac Death

**MISSION**: Project Heart Start (PHS) is dedicated to saving the lives of victims of out-of-hospital sudden cardiac arrest (SCA) through education of all capable citizens to perform the new CPR called compression-only CPR (COCPR) and to encourage and facilitate the placement and proper utilization of automated external defibrillators (AED).

Executive Summary: sudden cardiac arrest is usually not a heart attack but rather a sudden heart rhythm disturbance that if corrected with a shock from a defibrillator is life-saving. Survival from sudden cardiac arrest requires rapid institution of CPR, rapid defibrillation and excellent follow-up in the hospital. The lay public can't control the first two aspects of this problem.

Project Heart Start is a program to teach the new CPR which is compression only CPR plus calling 911. It has two compounds a video that students can watch either as a group or independently and a hands-on training using mannequins. The training takes approximately 45 minutes.

The program has been or will soon be instituted at Central New Mexico Community College, Sandia National Laboratories, and Albuquerque Public schools for both staff and students. A statewide training in 11 cities occurred in June 2012.

The program will train every person in the Mexico capable of performing CPR

The Problem: More than 300,000 deaths occur each year as a result of sudden cardiac arrest (SCA). In fact, SCA claims one life every two minutes, taking more lives each year than breast cancer, lung cancer, or AIDS. Sudden Cardiac Arrest occurs when the heart stops beating, abruptly and without warning. If this happens, blood stops flowing to the brain and other vital organs. In addition, if the heartbeat is not restored with an electrical shock immediately, death follows within minutes. Unlike a heart attack which results from a problem with the hearts plumbing or arteries, SCA is usually caused by a disturbance in the electrical system. So, even though the plumbing is functioning well, losing its electricity causes the heart to stop. Contrary to what most of the public and many doctors believe, the person who suddenly has a cardiac arrest and dies usually does not have a "massive heart attack" at all but rather an electrical disturbance called fibrillation that, if shocked back to normal rhythm, leaves the heart with minimal damage. I call these hearts "too good to die".

SCA can be survived if CPR is applied within a minute or two and the heart is shocked back to its normal rhythm. CPR is rarely administered when a person has a SCA. Fewer than 30% of the time is any effort made because the technique has been complicated and people are loath to perform rescue breathing. Additionally, the heart is not shocked back to normal with a defibrillator at the earliest possible time.

**THE SOLUTION**: PHS is a program that has been designed to improve outcomes by teaching the new compression only CPR and encouraging the acquisition of AEDs. COCPR removes the major impediments because it only requires a bystander to do two things: Call 911 and begin compression on the center of the chest 100 times a minute. COCPR eliminates or reduces the impediments to doing CPR.

The PHS course is easy to complete and takes less than an hour. It is easy to remember because no longer is there a need to check for a pulse or apply mouth-to-mouth breathing because these maneuvers waste precious time. COCPR is as effective and perhaps more effective than conventional CPR and instead of CPR being performed in fewer than 30% of SCA, it is utilized up to 80% of the time.

The second absolute necessity in reducing the dismal outlook from SCA is installation of AEDs. PHS is working with businesses, communities and groups where people congregate to acquire and learn to use the AED. In the past, rescuers had to wait for the paramedics to shock the heart but now with the AEDs that are simple to use, the lay rescuer can perform COCPR and use the AED to shock the heart far earlier than in the past thus saving many more lives.

WHAT IS THE PHS PROGRAM: For the past three years, the New Mexico Heart Institute with the support of KOAT-TV has put on mass CPR training programs. In June 2012, the program was present in 11 cities. The PHS program has two components. The first is a 12-minute video that demonstrates how to perform compression-only CPR and demonstrates the use of AEDs. It teaches the Heimlich maneuver to save choking victims and discusses what to do if you or someone you're with is having a heart attack. The second component is a 15 to 30 minute, hands-on session with a mannequin to learn how to pump hard and fast. The training is supervised by a facilitator who works with 5 to 10 students allowing the student to practice chest compressions and reinforce how to respond to someone who suddenly collapses. A demonstration of an AED is often part of the program.

The facilitators are individuals who have taken a CPR course and know how to do cardiac compressions. Ideally, knowledge of CPR is part of their daily work. Facilitators include doctors, nurses, EMTs, paramedics, fire rescue workers and also people who have taken the four-hour course. They watch a facilitator video prior to coming to the event and will watch it again during the hour before the event is held. We provide handout material that tells the facilitator what we want to emphasize and not emphasize. The facilitator does not have to be a certified instructor but rather someone who is capable of doing the compressions properly and is a good teacher. After completion of the course, the participant is given a card, and the project coordinator obtains the participant's name and ideally e-mail address.

The marketing of PHS program has been aided by KOAT TV, the Albuquerque Journal, Clear Channel, Cumulus, and Hutton Broadcasting. The Executive MBA Program at UNM's Anderson School created a marketing program that has served as a road map for our efforts.

WHAT HAS PHS ACCOMPLISHED: Project Heart Start's accomplishments have been in three areas. The first component is geared to raising awareness about the new CPR and its ease of use. This component has been carried out with mass CPR trainings beginning in 2010 and 2011 when we trained 2500 people at Isotopes Park. Project Heart Start was presented in 11 communities throughout New Mexico on June 23, 2012, led by a champion in each city and teams of people with backgrounds in areas of medicine, law, marketing and fund raising. The local hospitals were very supportive. The teams were responsible for logistics, facilitating, marketing and securing financial support. These groups will be on the forefront leading the program into the second component of Project Heart Start. The project has powerful media support with KOAT TV, the Albuquerque Journal, Clear Channel Broadcasting, Cumulus Broadcasting and the Hutton Broadcasting group. The mass training programs

will be held yearly and as often as communities wish to provide it. I estimate we received more than \$150,000 in promotions as we raised awareness through extensive TV, radio and print media.

Our current area of focus is on large organizations that carry out the program themselves and use their own personnel and creativity to make PHS work in their organizations. Our first location was Central New Mexico Community College with 30,000 students. Leaders there embraced the program and had trainings in all five campuses. They have created an ongoing program so that PHS is not a one-time event. It is supposed to be self-sustaining.

Educational institutions have been very welcoming in that the Albuquerque Public Schools have taken our program (we supply the video and the mannequins) and are training their personnel. This year we will be going into the classrooms to train all 9<sup>th</sup> graders first with a pilot program and then all 12,000 9th graders. I am making a presentation to all the school superintendents encouraging them with an offer to help them set up programs in their schools. We plan to train through 7<sup>th</sup> grade and have had a trial program at one of the schools to assess feasibility.

Sandia National Laboratories held an initial event in the fall of 2012 and plan to have an annual program. Intel is setting up a program for all their employees and their families. I have made presentations to the health workers and physicians from the pueblos and the Navajo reservation to initiate programs in their locations, and programs in Jemez Pueblo will be initiated in late 2012. We are currently also working with the Boy Scouts and Girl Scouts to bring PHS into their curricula. Programs are being set up throughout the state.

The third component that we are working on concomitantly with the second phase is the placement of AEDs throughout the state. We will be approaching businesses, hotels and religious groups to consider putting in the PHS program and to purchase AEDs. We can help with both.

We are identifying the 100 largest employers in New Mexico and will contact them and encourage them to put in the Heart Start program and AEDs. We plan to assist on getting the lowest pricing and assure training for the sites.

**WHAT IS THE FUTURE FOR PHS:** We have a model that can be replicated throughout the state and the country. The video is free and in New Mexico, we have purchased enough mannequins for people all over the state to put on a training program.

It is my intention to develop teams of volunteers to be site coordinators who go to senior centers, service organizations, places of worship, businesses, restaurants and hotels to facilitate the institution of PHS. The facilitators will also be able to help the sites purchase AEDs and arrange for training.

We are working with REELZ Channel and a former member of the Public Enemy band to create a video that will appeal to high school students. As a clinical professor at Duke University and founder of the Duke University Cooperative Cardiology Research Study group (DUCCS), I am working with 600 cardiology groups in the DUCCS organization to export the PHS program all over the country by providing the models we have used in New Mexico. We are working with Duke to evaluate the outcomes of our efforts using the Duke University Cardiovascular Research Institute's enormous investigative talents and have a cardiology fellow from Duke who will be carrying out the research.

**CONCLUSION**: Project Heart Start is a program that will change the face of sudden cardiac death. Our success comes from the broad-based support of the project. It is a low cost operation and in times of limited funds allows an organization to provide a wonderful skill to their employees and offer the

possibility that those hearts that are too good to die be saved with prompt, high quality CPR and a shock from an AED.

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